

SECTION 16951

ELECTRICAL ACCEPTANCE TESTING

SPECIFIER: Use this Section for SMALL electrical projects that DO NOT include complex equipment such as unit substations, switchboards or large motor control centers. FSS-9 will do acceptance testing. Coordinate this Section with FSS-9.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Testing, inspection and calibration of electrical equipment and material installed and connected under Division 16. The purposes of these inspections, tests and calibrations are to assure that the installed electrical systems and equipment, both contractor and owner-supplied, are:
 - 1. Installed according to design specifications and manufacturers' instructions,
 - 2. Ready to be energized,
 - 3. Operational and within industry and manufacturer's tolerances.
- B. Provide all material, equipment, labor, and technical supervision to do specified routine insulation, continuity and rotation tests.
- C. Schedule and coordinate the services of the LANL Operations and Maintenance Services Group, FSS-9, to do the acceptance testing, inspection and calibration of electrical systems as specified in this Section.

Edit paragraph D. to suit project requirements. Add other major electrical system components as needed. List the specific electrical equipment designations for this project.

- D. The following is a list of equipment and systems that FSS-9 will inspect, test and calibrate:
 - 1. Low voltage switchboards.
 - 2. Low voltage power and lighting panelboards.
 - 3. Dry-type transformers.
 - 4. Grounding system and connections.
 - 5. Service and feeder cables and connections.
 - 6. Circuit breakers 150 amps and larger.
 - 7. Panelboard main circuit breakers.
 - 8. Motors larger than 25 HP.

9. Motor starters and overload relays.
10. Safety switches.
11. Busways.
12. Power factor correction capacitors.
13. Transfer switches for non-emergency generators.
14. Ground fault protection.
15. Proper phase sequencing.
16. Controls and instrumentation.

Edit paragraph E. to suit project requirements.

- E. The following systems will be inspected and tested by either the installing firm or the University and are excluded from the scope of this Section:
1. Fire alarm system
 2. Telephone/data system
 3. Lightning protection system
 4. Security system
 5. Voice paging system
 6. Emergency generator systems

1.2 DIVISION OF RESPONSIBILITY

- A. Do routine insulation-resistance, continuity, and rotation tests for electrical equipment before, and in addition to, tests performed by FSS-9 that are specified in this Section.
- B. Supply a suitable and stable source of electrical power to each test site. Coordinate specific power requirements with FSS-9.
- C. Schedule the project to allow adequate time for electrical acceptance testing BEFORE it is energized. Notify FSS-9 when equipment becomes available for acceptance tests. Coordinate work to expedite inspection and test scheduling.
- D. The Contract Administrator will supply one set of the following to FSS-9 for use with electrical acceptance testing: preliminary short-circuit analysis, preliminary coordination study, preliminary protective device setting table, complete set of electrical Drawings, Specifications, and any pertinent Change Orders.
- E. Notify the Contract Administrator not less than 24 hours before commencement of any testing. If requested by the Contract Administrator, designated University personnel will witness tests.

- F. FSS-9 will report to the Contract Administrator, within three working days, any system, material, equipment or construction that is found defective based on acceptance tests or inspections.
- G. Within 15 days of direction from the Contract Administrator, rework, repair or replace any system, material, equipment or construction that is found defective based on acceptance tests or inspections.
- H. Upon direction from the Contract Administrator, FSS-9 will retest any system, material, equipment or construction that did not pass acceptance tests or inspections.

1.3 EQUIPMENT EVALUATION

- A. FSS-9 will do an equipment evaluation to decide the adequacy of circuit breakers, controllers, surge arresters, busways, switches and fuses.
- B. FSS-9 will compare the short-circuit ratings of the devices with the available fault currents.
- C. FSS-9 will notify the Contract Administrator of any problem areas or inadequacies in the electrical distribution system equipment.

1.4 CONNECTOR TORQUE

- A. FSS-9 will check for proper connector torques on service, feeder and grounding conductors, bus, and circuit breakers.
- B. FSS-9 will notify the Contract Administrator of discrepancies found.

1.5 COUNTERFEIT BOLTS AND CIRCUIT BREAKERS

- A. FSS-9 will inspect electrical systems and equipment for counterfeit bolts and circuit breakers.
- B. FSS-9 will notify the Contract Administrator of findings.

1.6 ELECTRICAL IDENTIFICATION

- A. FSS-9 will check that electrical equipment has been labeled and identified as required by Section 16195, ELECTRICAL IDENTIFICATION.
- B. FSS-9 will notify the Contract Administrator of discrepancies found.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION